

" THE JOURNAL "

Official Organ of the

AUSTRALIAN MODEL RAILWAY ASSOCIATION

For All Who Are Interested in Scale
Model Railroading

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-Member Australian Standards Association-

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EDITORIAL.

It is with some diffidence that I - figuratively - take up the pen which our Editor-of-late has, until now, so effectively wielded, for Ern Mainka has done an excellent job of passing on, in full detail, the News-and-Doings of our Association.

Allied with Ern in the writing of many leading articles of the Aims and Objects of the Association has been our Past-President Cliff (Rick) Richardson to whom, also, we are indebted for the Constitution of the A.M.R.A.

They were the right men for the job and we are most regretful they found it impossible with their other work and commitments, coupled with their spare(?) time 'O' gauge modelling for themselves to devote the hours necessary to the Editorship of 'The Journal'.

They have set a standard which it will not be an easy task to emulate.

Rick's continuing article in his excellent series for the Beginner, "Toss Aside Your Tinsnips" will be continued at the earliest possible date, also Ernie Dean's article on "Track and Layout".

Although appearing in February, this issue, to keep the continuity intact, is the November, 1952 'Journal' and, once we are into our stride - which means contributors articles for the ensuing issue are in the Editor's hands 4 weeks before the publication month, i.e., August, November, February and May - we hope to set our Prototypes an example by being 'On Time All the Time'.

Through the goodwill of Ern Mainka this, and future issues is, and will be, produced on his Fordigraph machine, a system which permits simultaneous reproduction of colour and line drawings.

This latter factor is of special interest to us, as in future articles, where applicable, drawings will be included, so, all in all, with the requested co-operation of ALL members, (see CO-OPERATION DEPARTMENT), we expect to produce 'bigger and brighter' issues of 'The Journal'.

10. The membership of the Association is steadily increasing, which is exactly what your Committee is striving for.

We want every chap, whether he is 12 or 72, who is operating a model layout - or about to, or even just thinking of getting into this most fascinating of hobbies - to join up with us, to observe the basic standards as set down by our Committee, arrived at after many, many months of conference and planning, of inquiry and research, of checking and re-checking and practical application to the actual working conditions of model railways.

By basic standards is simply meant those dimensions of a model which, if adhered to, allows Tom Jones to take his rolling stock across to Bill Smith's and, providing the method of power collection (i.e., 2-rail, 3-rail) is the same, Tom's reefers will couple with Bill's locos and guards' vans because coupler heights are identical, his loco's cylinders will not foul Bill's lineside structures because they are inside the loading gauge, the stack does not collect the keystone from his tunnel mouths - er, portals - as it is the correct height, for the same reason all his wheels clickety-clack merrily through Bill's diamond crossovers and double-slips because the wheel flanges are the standard thickness and their vertical faces are the correct spacing one from the other.

In other words all Tom's stock is fully interchangeable where it matters although his window

openings and panel spacings on his car sides vary here and there and his vehicle lengths are a shade different according to his scaling.

But when Tom's Up Limited flashes past Bill's roadside freight 'in the hole', such differences of detail are simply not distinguishable as the string of gleaming cars rushes toward the Terminal.

And when both model builders and model manufacturers have seen the wisdom of such a unified set-up, model railroading in this country is going to enjoy just such a boom and devotion, on a proportionate scale, as it now enjoys in that country of mass standards, the USA.

Your Committee wants every member, every one of you, to extend this most necessary conclusion by doing your utmost to bring into the fold at least one other new member so that the good work may snowball into a virile, nationwide organization, a power for good, the good of every model railwayman in every State of Australia.

MEET YOUR AUTHORS

I am happy in this issue of 'The Journal' to give you some articles from Ern Mainka and Dave Gross.

These two solid members need no introduction to early members, but for the benefit of new chaps here is a thumbnail sketch of each as I feel that a reader's enjoyment of an article is much more full when he either knows the Author, or knows of him, and an underlying tenet in an Association of this nature is to foster one big Brotherhood.

ERN MAINKA is a foundation member, and as I stated earlier, the first Editor; he is in his early forties.

He is an active modeller in "O" gauge 1:scale V.R. prototype, stud contact, 15v. potential at rectifier to allow for voltage drop, while his route length is 200 feet; has been 'at it' 4 years.

His hand built locos are an A2, R. 1102 electric freight, a converted Leeds O-6-2T to an 'E' and his stable is rounded off with a Walker-diesel railcar.

Ern's main interest lies in automatic signalling.

Thanks a lot, Ern

DAVE CROSS has been on the Committee since a fortnight after joining, and, prior to his present position of Asst Secretary, was Asst Treasurer.

During Tim Dunlop's convalescence after his unfortunate accident Dave was Acting Secretary which job is about the most onerous there is on a Committee - a Secretary has his nose to the grindstone all the while, and a chap who takes over the regulator at a moment's notice, and drives well, has what it takes; Dave drove well.

Dave's job is in a Patent Attorney's Office so that his article on the A.M.R.A. Trade Mark has come from a man who knows.

His gauge is 16.5mm., 2-rail, route length 100", 190" all trackage.

Locos are a 'C', Mogul, 3 Pacifics, 4 - O.6.0's, 1 - O.6.2, and a Diesel-electric, whilst there are 45 freight vehicles, mostly reefers, and 10 passenger cars.

Operation is point-to-point in a layout 20" x 10", on which 3 operators are normally required, but the system may be controlled by one man only.

Potential is 12v. D.C. from a rectifier.

Dave is a younger man than Ern, being in his early twenties; many thanks to you also, Dave.

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CO-OPERATION DEPARTMENT.

We want articles from any member who can, and will, write them, articles on your layout, with all the sticky details, yes, even to whether you use Lille pins for dog spikes - heads on or off - and so on; or that natty job you did on that piece of lineside equipment, that automatic loading and discharging coaletage or that excellent water tower or hydrant.

Every modeller we have wants to hear these sort of things from the 'other feller', but it must be reciprocal - you have some feature, some trinkle for doing something that everyone else wants to hear about so hop to fellers and fill my letterbox - I'll be only too happy to install a larger one!

If you feel a bit diffident about writing-up your layout yourself, just give us an invitation and a Committeeman or myself will be right out.

ELECTRIC MOTORS.

By E. Mainka.

The purpose of this article is to acquaint the beginner with the whys and wherefore's of electric motors suitable for "O" gauge use.

First of all let us examine a motor, which is really a simple machine and not as complicated as some think. First we have the ARMATURE which is composed of suitably shaped laminations or discs formed into 3 or more poles on which is wound wire of a suitable gauge - this is the part you see whizzing around. Secondly the COMMUTATOR which is usually built of copper and is connected to the ends of the armature windings. Third the BRUSHES which bear against the commutator - this is where you see the sparks. Next the SHAFT and its BEARINGS, and onto the shaft the armature and commutator are securely fitted. Lastly the FIELD - this is the stationary part which may be a wound or permanent magnet type. The term 'field' includes the portion - pole pieces - which almost encloses the armature.

So that is all there is to it, a revolving winding inside a magnetic field with the brushes and commutator acting as an automatic switch.

What sort of a motor should I use? is what the beginner asks. Well, I've sorted motors suitable for "O" into 4 main groups as follows.

GROUP 'A'. The series or universal motor, runs on A.C. or D.C.

GROUP 'B'. D.C. Motor with a wound field. Some types if altered or rewound will run on A.C.

GROUP 'C'. Permanent magnet motor. Will run only on Direct Current.

GROUP 'D'. Homemade or altered commercial motors.

It is best to keep as near as possible to the same

type of motor on all your locos. Also, the type of motor you use will possibly affect the design of your layout as you will see later. To analyse these groups.

In Group 'A' we find that the series motor is the most commonly used type in the model world. Most toy train makers use it probably because of the fact that it will run off batteries or a transformer. Used in a loco its characteristics are very good. Particularly when used with spur gearing the loco 'rolls' to a stop.

Digressing for a moment, we will consider 'reversing' facilities. The way you intend to reverse your locos is bound up with the design of your layout. For instance, if you intend to use a 'hand' reverse, then your terminals and yards would need to be within handy reach unless you possess a pair of roller skates. Now to series motors. One terminal on the motor is connected to one brush, the other terminal is connected to one end of the field coil, the other end of which is connected to the remaining brush, thus the armature, via the brushes is in series with the field coil. If you change the connections to the terminals of the motor it will continue to run in the same direction whether you are using A.C. or D.C. The motor will only reverse if the connections to the two brushes only are changed over, or else the connections to the field coil and that's where the snag comes in - commercially made jobs have either a hand operated switch, a sequence reverser, or nothing at all. A sequence reverser operates every time there is an interruption to the current and consequently becomes such a confounded nuisance to the serious modeller that he resorts to using the hand switch. There are other ways of reversing a series motor from the control board which involves extra coils, relays, gadgets and what have you which require more space in the loco, more maintenance and knowhow, so I won't complicate things further at this stage.

Now for Group 'B'. Most of these motors are ex Disposables, they come in all shapes and sizes, but have several things in common, namely, beautiful workmanship, quiet running, ball bearings, wound field and designed for 24volts D.C. operation. Before you buy one of these there are several things to consider.

Is there enough space in the loco or tender? Can it be rewound for a lower voltage? And also, as these motors have a wound field the methods of reversing are the same as for Group 'A'. Some of these motors will also run on A.C.

Coming to Group 'C', the permanent magnet motor. In this case the current is fed straight to the 2 brushes.

A suitably shaped magnet takes the place of the wound field mentioned in Group 'A'. By changing the connections to the motor terminals the motor will run the other way; this is affected by using a Double-pole Double-throw switch on the control board. A flick of the switch and your loco positively reverses even though it may be some distance away. The disadvantages of the permag motor are (A) when the current is out off the loco comes to a dead stop (sometimes possible to overcome by fitting a flywheel on the motor shaft), and (B) the problem of getting a reasonably priced D.C. power supply. Dry batteries are ruled out because of limited life. An old car battery is probably the ideal supply if you have a large layout in constant use, but you will need a charger to keep the battery from going flat. An idea comes to me here, those who own a car with a 12volt system could run a couple of leads from the control board and clip onto the battery of the car. Another source of D.C. is a battery charger itself, a 12v. 4amp. model would suit a small layout. For a larger layout where 3 or 4 locos are running at the same time, and you have plenty of money and don't want to mess around with batteries you can get a rectifier unit made to order, say 15 to 16 volts at about 12amps.

A word of warning: applying A.C. to a permag motor will demagnetize it, and don't remove the armature unless you cannot help it as this 'breaks' the magnetic field and it will not run as well as new. To put things right again, you will have to get the job re-magnetized with the armature mounted in the motor, this 'sets' the field with those 'invisible lines of force'.

Group 'D'. It would take a whole book to discuss home-made motors fully, but I can honestly say I have seen some fine performances put up by motors built at home from odds and ends. It depends on how much time you have and whether you are adapted to such work.

If you insist on making the whole of a loco down to the last rivet then I advise you to buy a copy of Ernest Carter's "Making your own 'O' gauge motor".

Another way is to use an armature ready made and mount it with a suitable permanent magnet. A word of warning here - some go like a bomb, others are quite useless.

~ AVAILABILITY. Group 'A'. There are some good 'model driving' motors on the market such as the 'Electra', but there are problems in fitting them in the confined space. Hornby 'O' gauge electric locos can be adapted, but they are scarce. Then there is Lionel if you have any or enough dollars. Avoid the old 'Ives' job, they draw 7amps.

Group 'B'. There are still a number of disposals motors about but the prices are rising as they become scarcer. Before you buy however, check for measurements, performance and adaptability.

Group 'C'. A real problem here. Ready made locos with a 12v. permag motor are available, such as Leeds and Bassett-Lowke but the prices are up in the sky.

There are several American makes if you have the \$
Coming to motors only, there is the Romford which is an excellent job, but you need to send to England.

So apart from the foregoing we are stumped until a local manufacturer can do something about it.

Group "D". The parts for making your own motor are readily available. Armature stampings are made here, shafting is obtainable from the leading hardware houses, winding wire at radio shops, magnets are made here and the rest out of the junk box.

Well, Mr. Beginner I trust you are somewhat wiser now and if you want any more information write to the A.M.R.A. and we'll do our best to help you out.

In conclusion, to intending HO-OO modellers I might mention that you cannot mix Hornby Dublo with Trix.

Hornby Dublo comes into Group "C", and Trix belongs to Group "A".

(Trix, however, may be run with Hornby Dublo if the current supply is D.C., but as Dublo locos draw under lamp, and Trix well over, the Dublo Controller overload relay will cut-out long before a Trix loco is running at full speed. This may be overcome by re-setting the overload tension spring - providing you know what you are doing - but then prolonged running of a Trix loco on any but full speed results in those windings on the rheostat in use at the time becoming over-heated owing to their passing a current of a higher value than intended. The answer is a rheostat with a winding designed to take the current necessary for the satisfactory operation of the Trix motor. But as Ern points out, the sequence is really a 'confounded nuisance' the way it stops or reverses your loco at unwanted interruptions of the current. The solution here is to remove the reverser, field poles and coil and fit new field poles with an Alnico magnet, all of which is the material for a thorough article on the subject. -Ed.)

THE "A.M.R.A." TRADE MARK. By David Gross.

The Australian Model Railway Association's Trade Mark "A.M.R.A." and device of a wheel upon a rail, offers protection for the Association within the Territories of the Commonwealth to which the Trade Mark Act applies. This includes all States and Papua.

The Association shall be entitled to institute any proceeding to prevent unauthorised use or to recover damages for the infringement, of the mark.

The rights acquired by the registration of the Trade Mark shall be deemed to be infringed by the use of a mark substantially identical with the "A.M.R.A." Trade Mark or so nearly resembling it as to be likely to deceive and being used in respect of the goods which the "A.M.R.A." Trade Mark covers.

The goods which the Association's Mark covers are Model Railway Equipment, parts and accessories thereof.

Further to the protection afforded by the normal Trade Mark Registration, permission has been applied for to register the mark as a Standardization Trade Mark, where the Association undertakes the examination of any goods, for which the mark is registered, in respect of material, quality and accuracy thereof, and to certify the result of such examination by the use of the "A.M.R.A." Trade Mark.

It will be appreciated that the Association has a great responsibility in approving of products which are to be sold to the public and as only good products will be approved of, this will lead to a high standard of manufacture. This, in turn, will be of great benefit to the Modeller and the Trader alike and to this end the "A.M.R.A." Trade Mark will play a vital part in Australian Model Railroading.